

II. *South African and Australian Aculeate Hymenoptera in the Oxford Museum.* By the late Col. C. T. BINGHAM, F.Z.S.

[Read May 3rd, 1911.]

THE following paper forms the concluding section of the lamented author's memoir published in these Transactions for 1911 (No. XXII, p. 528). When the proofs of this memoir were received from the printers, it was realised that the concluding portion was wanting. Publication could not well be delayed, and the paper appeared with the introductory note adjusted to suit the circumstances. The missing manuscript—misaid as the result of a curious accident—having been lately recovered, it is obviously desirable that the memoir should be completed as soon as possible, and that its second part should appear in as close proximity as possible to the first.

The following paper contains the description of one Aculeate captured by Dr. F. A. Dixey, and four by Dr. G. B. Longstaff, in South Africa in 1905. It also includes descriptions of five Australian Aculeates in the Hope Collection. I had long been interested in the peculiar types of synaposematic pattern found in all large groups of Australian Aculeates, and reproduced in many non-Hymenopterous mimics. Col. Bingham very kindly determined the species in an illustrative collection, and wrote the following descriptions of those which were new to science.

The types of all descriptions are in the Hope Department of the Oxford University Museum.

In this, as in the first part of the memoir, I have acted under the kind and skilled advice of Mr. Rowland E. Turner.

E. B. POULTON.

Family SPHEGIDAE.

1. CERCERIS CUCULLATA, sp. nov.

N. AUSTRALIA: Port Essington.

♂. Black, the front of the head below the base of the antennae, the scape, a spot behind the eyes, a spot on each side of the pronotum, the scutellum and postsutellum, a spot on each side of the

median segment, the legs, the base above of the 2nd abdominal segment and the whole of the 4th and 6th segments, chrome yellow; the basal two-thirds of the mandibles and the underside of the basal three or four joints of the flagellum fulvous. Head thorax and abdomen finely punctured, rugose and opaque. Head broad transverse above, broader than the thorax. Thorax subglobose, the enclosed space at the base of the median segment smooth triangular convex, and divided medially by a broad longitudinal furrow. Abdomen elongate narrower than the thorax, the basal segment subpetiolate, the constrictions between the segments well-marked; pygidial area flat, punctured and laterally margined. Wings hyaline slightly infusate towards the apex.

Length ♂ 11 mm. Exp. 23 mm.

Described from a single example.

Nearest to *C. australis*, Saussure, but the enclosed space at the base of the median segment of *C. australis* is closely punctured like the rest of the median segment; the punctation of the abdomen much coarser and the distribution of the black and yellow colours especially on the abdomen quite different.

2. GORYTES AUSTRINUS, sp. nov.

Locality doubtful. The specimen originally belonged to Prof. Westwood's private collection and it bears in pencil the following words written by him: "N. H. Hunter's R. or V. D. L. [Horsley]." The Australian type of pattern suggests that the first-named locality is correct. "N.H." stands for "New Holland."

♀. Black, the clypeus pale yellow, the scape and basal joint of the antennae, the pronotum, the tegulae and a short broad line on the mesonotum above them, the scutellum, postscutellum, legs, basal abdominal segment a small spot on either side of the 2nd, the apical margins broadly of the 3rd to the 5th and the whole of the apical segment orange red; the coxae and femora of the legs variegated with black; wings fusco-hyaline darkening towards the costal margins of the forewings. Head above and the thorax somewhat coarsely punctured, rugose and pubescent, abdomen pubescent, the apical margin of the 1st segment widely emarginate in the middle above, the apical three segments strongly curved downwards, a well-marked constriction between the basal two

segments. Legs stout and powerful, the tibiae furnished with strong spines.

Length ♀ 13 mm. Exp. 26 mm.

Described from a single example.

NOTOGONIA DIXEYI, form n.

NATAL: The Bluff, near Durban: Aug. 16, 1905 (*F. A. Dixey*).

♀. Black, the scape of the antennae, and the tarsi of the legs dull red, the claw-joint of the latter more or less blackish above; on the anterior legs the red spreads to the apex of the tibiae. Head, thorax (except the median segment), and abdomen smooth unpunctured; on the head the inner orbits of the eyes and the sides of the clypeus clothed with dense golden pubescence, very rich and shining in certain lights; wings fuscous with a rich purple effulgence; the apical margins of the abdominal segments above with transverse, minutely pubescent, whitish narrow bands; pygidial area well defined covered with stiff black hairs. Head: the anterior margin of the clypeus with a few coarse punctures; the flagellum of the antennae dull and opaque, 2nd and 3rd joints subequal, each twice the length of the basal joint. Thorax: massive, the mesonotum slightly convex, with a short longitudinal carina on each side above the tegulae; median segment long rounded above, finely, but irregularly, transversely striate, abruptly truncate posteriorly, the apex above slightly projecting in the middle above at the edge of the truncation; legs with strong short spines on the tibiae and tarsi, the tibial calcaria long, on the posterior tibiae as long as the basal joint of the tarsi, claws long and curved. Abdomen short, not longer than the thorax, moderately massive, basal ventral segment with a preapical, transverse, strongly marked groove, 2nd segment with a basal broad shallow depression on each side of a bluntly raised medial carina that does not extend to its apical margin.

Length ♀ 16 mm. Exp. 26 mm.

Described from a single example. Figured in Dr. Longstaff's "Butterfly Hunting in Many Lands," Plate II, fig. 4 (1912).

NOTE.—The name given in the manuscript of this memoir was "*vafra*," but a label on the type specimen records "*dixeyi*," and not "*vafra*." Dr. Longstaff tells me that he knew of Col. Bingham's intention to alter his MSS. to "*dixeyi*."—E. B. P.

Family EUMENIDAE.

ODYNERUS LONGSTAFFI, form n.

CAPE COLONY: Creek on the Buffalo River, near East London: Sept. 28, 1905 (*G. B. Longstaff*).

♂. Dull red, base of the mandibles, the clypeus, the front immediately above it, the inner orbits of the eyes from the base of the clypeus to the middle of the emargination in the eyes, a line along the scape of the antennae in front, a transverse band along the apex of the postscutellum, two obliquely placed oval spots one on each side on the middle of the basal abdominal segment, two larger spots one on each side at the base of the 2nd segment, and transverse preapical bands on the 2nd and 3rd segments bright yellow; a cone-shaped large patch above the clypeus extends up to the vertex including the ocelli, the mesonotum and the middle of the posterior face of the median segment, black, the mesonotum with a central, short, longitudinal red line. The red of the antennae and legs is of a paler tint verging on orange, the tibiae and tarsi of the latter still paler. Wings flavo-hyaline, the radial cell and terminal edge of the forewings lightly fuscous. Head above, pro- and mesonotum, scutellum, postscutellum and median segment very closely and finely punctured. Head: the clypeus slightly convex, its posterior and side margins above rounded, the sides below straight, inclined obliquely inwards, the apex truncate and circularly emarginate; emargination of the eyes deep; antennae slender, circularly curled at their apices; head from above transversely rectangular, broader than long and as broad as the thorax. Thorax massive, the median segment short, its posterior face concave with a slender groove down the middle, posteriorly the sides are rounded, and tuberculate or subdentate in the middle. Abdomen: sessile, basal segment campanulate, slightly strangulate before the apex, 2nd segment as broad as long; 7th broadly rounded posteriorly and fringed with brown hairs.

Length ♂ 13 mm. Exp. 26 mm.

Described from one example in the British Museum and one at Oxford: figured in "Butterfly Hunting in Many Lands," Plate II, fig. 6.

Comes nearest to *O. mutans*, Sauss., from Senegambia, which however has two tubercles between the antennae, the median segment transversely striate, the apical margin

of the basal abdominal segment angulated posteriorly and bears transverse yellow bands on the 1-4 abdominal segments.

ODYNERUS DECORATUS, sp. nov.

W. AUSTRALIA: Towranna Plains between Yule River and Sherlock River: Jan. to May, 1898 (*R. Clement*).

♂. Lemon yellow, the mandibles, the bases of the antennae, the apex of the scape, the flagellum, a large square mark on the vertex surrounding the ocelli and reaching the upper margin of the eyes on each side, a square mark on the collar, the mesonotum, scutellum and postscutellum, an oblong mark on the 2nd abdominal segment, the base of the 4th and 5th narrowly and the apical two segments black, a spot at the base of the mandibles, two minute spots on the vertex at the upper angles of the eyes, a square mark at the base of the mesonotum, a transverse mark on the scutellum divided medially by a fine black line and the middle of the postscutellum yellow. Head, thorax and abdomen punctured rugose and covered with a minute, short, silky pubescence; clypeus pyriform truncate at apex; prothorax vertically truncate in front, almost concave, the pronotum margined anteriorly; mesonotum slightly convex, scutellum and postscutellum not prominent, median segment rounded at the sides, the apex slightly concave. Wings hyaline brown along the costal margin, nervures brown, tegulae yellow with a faint brown spot in the middle. Abdomen massive, sessile, longer than the head and thorax united, the apical margin of the 2nd segment crenulate,

♀. Similar to the ♂ but in the two specimens before me the ground-colour is reddish (in one specimen certainly, and in the other probably darkened by cyanide). It differs in being larger and more strongly built than the ♂ and has the apical two abdominal segments reddish brown, not black: the shape and character of the black markings however are very similar.

Length ♂ 10 mm.; ♀ 11.5 mm. (to apex of second abdominal segment). Exp. ♂ 23 mm.; ♀ 27 mm.

Described from a single example of each sex.

Belongs to Saussure's subgenus *Lionotus*.

I have preferred to give a full description of the ♂ rather than of the ♀ because, as noted above, I consider the ground-colour of the two female specimens I have before me altered by cyanide.

RHYNCHIUM NIGROLIMBATUM, sp. nov.

W. AUSTRALIA : Towranna Plains : 1898 (*Clement*).

♀. Chrome yellow, the head above and the 2nd abdominal segment black, the clypeus, the front below the anterior ocellus extending into the emargination of the eyes, and the antennae chrome yellow, mandibles reddish yellow ; wings dark fuscous purple, hyaline along their posterior margins. Head above closely and coarsely rugose punctate, the punctures on the front in certain lights running into striae, clypeus sparsely and very shallowly punctured almost smooth, the apex transversely truncate not emarginate, eyes large reaching the base of the mandibles ; these latter coarsely longitudinally striate and punctured. Thorax longer than broad finely punctured, the prothorax vertically transversely truncate anteriorly, mesonotum convex, scutellum and postscutellum flat, the former almost square the latter transverse, both separated from the mesonotum anteriorly, from each other, and from the median segment posteriorly by well-marked transverse sutures ; median segment long, concave posteriorly bearing a medial fine longitudinally impressed line, and with the lower posterior angles somewhat produced. Wings ample, the 2nd cubital cell in the forewing trapezoidal receiving both recurrent nervures ; legs short slender pubescent, claws unidentate. Abdomen massive, the basal segment narrow, beneath with a triangular depression and a subapical transverse groove, above convex and rounded ; 2nd segment elongate broadening posteriorly.

Length ♀ 14 mm. (to apex of 2nd abdominal segment). Exp. 30 mm.

Described from a single example.

ALASTOR ABNORMIS, sp. nov.

W. AUSTRALIA : Towranna Plains : 1898 (*Clement*).

♂. Orange yellow, head and the 2nd abdominal segment black, the clypeus, a mark somewhat in the shape of a chess pawn above it on the front, and the scape in front orange yellow ; wings fuscous, hyaline along the posterior margins. Head from above transverse as broad as the thorax, closely and somewhat coarsely rugose punctate above and behind the eyes more finely and sparsely punctured on the front and clypeus, the latter covered with a fine silky short white pubescence, somewhat pyriform with the apex truncato-emarginate. Front with the orange macula raised carinate. Eyes large reaching to the base of the mandibles, mandibles long toothed on the inner margins. Antennae subclavate somewhat like that of

Masaris. Thorax broad and rounded coarsely punctured, the prothorax vertically truncate anteriorly, the pronotum margined in front; mesonotum convex; scutellum and postscutellum raised gibbous separated from the mesonotum in front from each other and from the median segment by well-marked sutures; median segment very short somewhat suppressed under the scutellum and postscutellum, the sides rounded not produced posteriorly. Wings ample, the 2nd cubital cell of the forewing petiolate; legs stout pubescent, claws unidentate. Abdomen sessile the 1st segment somewhat compressed and campanulate posteriorly, 2nd segment long broadening gradually from front to back.

Length ♂ 12 mm. (to apex of 2nd abdominal segment). Exp. 27 mm.

Described from four examples.

This remarkable and handsome species may afterwards have to be separated generically. I have seen only four males, and they are strikingly aberrant, differing from all known wasps, fossorial or social, in having *only 9 joints in the antennae*. The closest scrutiny under a microscope reveals no more than 9 joints, the apical joint being exceedingly small and sunk in the apex of the subapical joint.

There can be no question of the insect belonging to the *Diploptera*; and in the rest of its structure, particularly in the venation of the forewing, it closely resembles *Alastor*, under which genus I have provisionally placed it.

ANTHOPHILA.

Family COLLETIDAE.

PROSOPIS SIMPLEX, form n.

CAPE COLONY: Queen's Park, East London: Sept. 26, 1905 (*G. B. Longstaff*).

♀. Black immaculate, the tibiae and tarsi turning to slightly reddish brown, the flagellum of the antennae except the basal joint, beneath maroon. Head and thorax closely but not very coarsely punctured, the abdomen smooth and slightly shining in certain lights, but not polished. Head broader than the thorax, flat in front, clypeus large, broad, anteriorly truncate antennae short, robust, their apices roundly blunt. Thorax: pronotum transverse, forming a mere narrow ridge; mesonotum convex with an anterior medial and a lateral, impressed, short longitudinal line which are short and shining;

median segment compressed posteriorly, the apex truncate, the face of the truncation crossed by a vertical, well-marked carina and bordered on each side by similar carinae, the basal concavity on the segment lunate and edged anteriorly and posteriorly by a series of large punctures or pits; wings hyaline, slightly fuscous, legs slender, minutely pubescent. Abdomen about as long as the head and thorax united, the 2nd segment with traces on each side of a fringe of white hairs.

Length ♀ 5 mm. Exp. 9 mm.

Described from a single example.

Easily distinguishable from all described forms of *Prosopis* by the sculpture and by its uniform black colour entirely devoid of yellow markings.

Family APIDAE.

HALICTUS INORNATUS, form n.

CAPE COLONY: Zwartkops, near Port Elizabeth: Aug. 11, 1905 (*G. B. Longstaff*).

♀. Dull black, covered with soft long reddish-brown erect hairs, the 2nd to the 5th abdominal segments with lateral transverse short bands of whitish-yellow pubescence at their bases, the anal rims ferruginous, the legs covered with yellowish pubescence which turns to ferruginous on the inner side of the posterior metatarsi, the tibial calcaria of the posterior legs yellowish-white at base, ferruginous towards their apices, the claw joint and claws of all the tarsi ferruginous. Head as broad as the thorax, flat in front, closely punctured, the clypeus slightly convex transversely and broadly truncate anteriorly. Thorax more sparsely and finely punctured, the depressed area at base of the median segment lunate and very closely punctured, the punctures running into longitudinal striae. Abdomen very minutely and sparsely punctured, shining above.

Length ♀ 10 mm. Exp. 18 mm.

Described from a single example.

CERATINA VITTATA, form n.

ORANGE RIVER COLONY: "Wonderboom," near Pretoria: Aug. 31, 1905 (*G. B. Longstaff*).

♀. Black, two large coalescent spots on the labrum, a very broad L-shaped mark on the clypeus and a narrow line on the front of

the anterior tibiae pale yellow ; the humeral angles of the pronotum and transverse laterally broadened bands on the 2nd to the 5th abdominal segments fringed with short stiff white hairs. Head, thorax and abdomen very closely and uniformly punctured and granulate. The median segment of the thorax is very short abruptly sloped downwards from the postscutellum, the usual depression at the base of the segment very ill-defined, scarcely perceptible. Abdomen stout and comparatively massive, the 6th segment with a sharp longitudinal carina towards apex. Wings hyaline, nervures and tegulae dark brown.

Length ♀ 7 mm. Exp. 12 mm.

Described from a single example.